ABSTRACT

The present invention includes a three-dimensional base body (40) having a curved surface allowing definition of a circular orbital band (B), an electroacoustic transducer (21) arranged on the orbital band (B) of the three-dimensional base body (40) and configured to excite surface acoustic wave to perform multiple roundtrips along the orbital band (B), and a sensitive film (25) formed on at least a part of the orbital band (B) of the three-dimensional base body (40) and configured to react with a specific gas molecule. The surface acoustic wave experienced the multiple roundtrips along the orbital band (B) is then converted into a high frequency electric signal again by an interdigital transducer (21). The resulting high frequency electric signal is transferred to a detection/ output unit (24) via a switching unit (23) and then detected by the detection/ output unit (24).